New Mexico Tech
Environmental Finance Center

2003 Annual Report of the Environmental Finance Center Network

Region 6 - New Mexico Institute of Mining and Technology

The New Mexico EFC was established in 1992 as the first Environmental Finance Center

Introduction

The Environmental Finance Center serving EPA Region 6 (NM EFC) formally completed its transfer to the New Mexico Institute of Mining and Technology (New Mexico Tech) in June of 2003. The Center is still located at the same offices in Albuquerque, New Mexico and maintains the staff and activities it conducted at the University of New Mexico. The New Mexico EFC (NM EFC) believes this change will open up additional opportunities for its clients and will increase the overall support for the center.

The NM EFC is dedicated to helping state, local, and tribal governments meet environmental infrastructure needs and regulatory compliance through state and local capacity building. Capacity building includes enhancing technical, managerial, and financial capabilities to achieve consistent and sustainable regulatory compliance and to develop sustainable infrastructure.

The NM EFC assists in local capacity building by:

- Examining alternative approaches to meeting regulatory compliance or environmental infrastructure needs
- Empowering communities to act as the "drivers" for their own projects
- Assisting with procuring professional services
- Presenting funding alternatives
- Acting as a bridge between federal, state, local and tribal governments
- Presenting neutral analyses of issues or projects
- Gathering stakeholder input.

To complete its projects, the UNM EFC relies on many tools and techniques, including: stakeholder meeting facilitation; internal agency workgroup facilitation; advisory group development; financing alternatives presentation and directories; technology transfer; charrettes, conferences and workshops; research publications and reports; and one-on-one assistance to state, local, and tribal governments and environmental service providers (e.g., water and wastewater systems.). The NM EFC attends many conferences, trainings and workshops as a participant, exhibitor, and presenter to gather information to share with its clients and to disseminate information regarding NM EFC projects that could be of interest and benefit to other entities.

The NM EFC has been very active over the past year and has completed numerous projects, including:

- Capacity Development Activities for Region 6 states
- Capacity Development for Tribal Water Systems
- Assistance to New Mexico SRF Applicants
- Resource-Based or Unified Source Water Protection Project
- Tribal Operator Certification Institute
- Independent Analysis of Hydroscope Technology for the City of Albuquerque, NM
- Public Management Finance Program
- Resource Geographic Information System Program
- Purchase of the town of Playas, NM
- Multiple Barrier Evaluation Training for U.S. Forest Service

Accomplishments

Capacity Development Activities for Region 6 States

One of the major thrusts in capacity development in 2003 was rate setting training. There is still a tremendous need for water systems to set more equitable rates that fully recover costs.

The NM EFC began using the Missouri ShowMe Ratemaker model last year and has continued to use this product. The NM EFC presented five (5) rate setting workshops that covered all seven (7) Councils of Government in the State. Over 150 people attended these trainings and each participant was given the opportunity to use the program during the training. At three of the workshops, the participants were also given training on capital budgeting. Rate setting workshops were also held at the New Mexico Rural Water Conference in Las Cruces, New Mexico. In addition to the workshops in New Mexico, the NM EFC also conducted a workshop in Dalla, Texas, at the EPA Region 6 offices so that the other Region 6 states could see this product as well. Representatives from Texas, Arkansas, Louisiana, and Oklahoma attended this training as well as EPA Region 6 staff. The NM EFC also provided one-on-one assistance to several communities in New Mexico to help them establish adequate rates.

The NM EFC offered to conduct stakeholder workshops on capacity development for each Region 6 state. Texas and Arkansas wanted this type of meeting and workshops on this issue were held during 2003 for these states. In general, the meetings indicated that some progress is being made in the area of capacity development, but there is a need to have better tools to measure performance improvements.

The NM EFC has been working with the New Mexico Environment Department (NMED) Drinking Water Bureau to address the need for source water protection planning. This effort is a multi-organizational approach that includes all the main assistance providers and NMED. The collaborative effort is termed "Partners in Protection" and is intended to encourage small to medium sized water systems to undertake source water protection planning.

For several years, the NM EFC has been working with all of the funding agencies in New Mexico to develop a unified application for funding. The application was finally completed and signed by the Governor in 2003. The NM EFC is proud to have been a part of this effort to improve the funding process for communities throughout the State.

Protecting Public Health Using the Multiple Barrier Approach for Tribal Water Systems

The NM EFC has expanded its Tribal assistance efforts and framed them in the context of the multiple barrier approach to public health protection. The multiple barrier concept is one that focuses on the source, treatment, and distribution components of the water system and makes clear the need to effectively use all of these barriers to prevent contamination. This focus is used throughout the assistance efforts to increase overall compliance with drinking water regulations and to improve public health protection. In 2003, there continued to be a drop in the number of non-complying systems with very few consistent non-compliers. Also, the number of monitoring violations was greatly reduced.

To accomplish the goals of this project – increased compliance; improved technical, managerial, and financial capacity; and greater public health protection, the tasks were divided into three main categories.

Compliance Assistance – These activities include assistance with compliance sampling, managing laboratory contracts for the analysis of compliance samples, maintaining a compliance database, and following up with any water system that has a "hit" or positive bacteriological result.

Capacity Development – These activities include one-on-one assistance to the water systems in increasing technical, managerial, or financial capabilities. Examples of activities include: rate setting training and assistance, board development, ordinance development, educational outreach materials, technical training, phone on-site assistance with problems, and troubleshooting.

Beyond Compliance – The activities in this category are those activities that are not required by any regulation but will push the water system in the direction of increased public health protection. Specific examples include: Comprehensive Performance Evaluations or CPEs, Performance Based Training (PBT), and Multiple Barrier Evaluations and associated training. These activities will push the Tribal water systems beyond just complying with the minimum regulatory requirements.

In addition, the NM EFC has begun working more closely with the Indian Health Service (IHS) to better coordinate activities and to ensure that personnel and money resources are used wisely. Particular efforts to coordinate include public outreach materials, the coordination of sanitary surveys with the NM EFC's multiple barrier evaluations, and arsenic testing.

In the next year, the NM EFC will continue to work toward greater compliance and improved performance beyond compliance.

Tribal Operator Certification Institute

The NM EFC received EPA Region 6 approval on its Tribal Operator Certification Institute in 2002, allowing it to give the first Region 6 Tribal Water Operators certification test in January 2003. Two of the four operators taking this test passed and received a certificate from EPA indicating that they were Level 1 Water Treatment Operators.

The NM EFC offered tests two additional times in 2003. Each test is preceded by a practice test and review session to give the operators an opportunity to experience a test setting prior to the real event. Tests will be offered once per quarter in 2004.

Activities related to the testing process include: verification of applications, working with operators to complete required elements of the application process, coordination with ABC testing services to receive and grade tests, and administration of the examination fee. (A small fee is charged to offset some of the testing costs and to help ensure that operators who sign up for the test will take it.).

To ensure that the program is meeting the needs of tribal operators, the NM EFC established the Tribal Utility Advisory Committee (TUAC.) This group meets quarterly, is facilitated by the EFC, and includes all tribes who wish to participate. The group discusses potential changes to the guidelines, training that may be needed, approves the annual report, and generally provides guidance and advice to the NM EFC.

An integral part of the operator certification program is operator training. The training consists of two components: Pathway Training and Gap Training. The Pathway Training is year-long, intensive training for a small group of operators to prepare them for the test and to increase their overall knowledge of water treatment issues. In 2003, this training was provided on site to two groups of operators, one in the northern part of the state and one in the central west part of the state. The second type of training is Gap Training. These trainings are intended to fill in the "gaps" of what other providers do not offer or that do not meet the needs of Tribal operators. In 2003, specific gap trainings included Total Coliform Rule Training, Safe Drinking Water Act Training, and Multiple Barrier Approach Training.

Assistance to New Mexico SRF Applicants

The NM EFC continued to work with the New Mexico Finance Authority (NMFA) on Drinking Water Revolving Loan Fund (DWRLF) activities, but this effort was reduced in 2003 due to changes within the NMFA. Activities completed in 2003 included: completion of a workbook for NMFA staff on the DWRLF process, completion of a workbook on the state environmental review process, assistance to water systems in completing the application process, and training for DWRLF staff.

In the summer of 2003, the NMFA issued an RFP for engineering and environmental services for small water systems. The NM EFC lead a team of small, private engineering and environmental firms and was selected for this work.

Resource-Based or Unified Source Water Protection Project

As the lead EFC for this project, the NM EFC is working with the EFCs in Maryland, North Carolina, Boise State and New York, to develop resource-based or unified source water protection plans for clusters of communities in eight (8) different states. This project builds

upon the work performed under the Mora County Unified Source Water Protection Plan Pilot Project and the skills of the other EFCs in the project.

This project involves assistance in the development of a source water protection council, the examination of potential sources of contamination, determining appropriate source water protection measures that may minimize or eliminate contamination concerns, preparing a unified source water protection plan, and implementing the plan. The EFCs will facilitate stakeholder and council meetings and provide technical information transfer.

The eight states that the EFCs are working in, include: New York, Maryland, West Virginia, North Carolina, Texas, Colorado, Idaho, and Oregon. The NM EFC is conducting the projects in Texas and Colorado. The Texas project includes water systems around Lake Meredith. This lake is operated by the Canadian River Municipal Water Authority (CRMWA) and supplies water to Amarillo and Lubbock and nine other communities. The major concerns for source water protection on this project include: oil drilling and exploration, ranching, recreational uses of the lake, and septic systems around the lake.

The project in Colorado focuses on the systems that are pulling water out of the Boulder Feeder Canal. This open canal supplies water to the City of Boulder and a few smaller towns nearby. The open canal is exposed to runoff from agricultural and residential areas as well as recreational impacts. There is a proposal to increase the recreation in this area that in turn would increase the potential for source water impacts. This issue will be addressed within the context of the source water protection project.

The work for this project in 2003 was a continuation of the work started in 2001 and 2002. The project will be completed in June 2004.

Independent Analysis of Hydroscope Technology for City of Albuquerque

The City of Albuquerque was investigating a particular technology that could be used for essentially non-destructive evaluations of pipe conditions. They wanted to have an independent analysis of the cost-effectiveness of using this particular pipe analysis technique in the context of their overall pipe replacement and repair program. The technology can detect certain types of problems in ductile iron, cast iron and steel pipe. A proprietary software is used to make determinations as to which of the problems detected is likely to cause a future leak.

The EFC completed this project in June of 2003 with two reports and a presentation of the results to the City. The first report summarized Phase I of the project and included the examination of 5 years of City repair data taken from work log records. An extensive access database was developed to aid in analyzing the data. The results showed a much higher break rate in 4 and 6 inch steel pipe of the age range 40 to 60 years than for pipes in the rest of the

City's system. This rate was an order of magnitude higher for steel than for cast and ductile iron pipe (0.9 breaks per mile vs. 0.05 breaks per mile). Very few breaks were occurring in other pipe types within the City system. The report also included an analysis of the types of breaks experienced within the system, the typical repair scenario and cost, and the current pipe replacement program.

The Phase II report investigated the evaluation technology's ability to cost-effectively meet the needs of the City's water utility. Considerations included the technology's ability to investigate the type of pipe that was breaking, the cost of using the technology, the life cycle cost of using the technology to make spot repairs and replacements verses the life cycle cost of complete replacement, the quantity of pipe within the system, and the ability of the technology to accurately predict where a break was most likely to occur. The report concluded that it was not cost-effective for the City to use this technology on a general condition assessment basis. However, it was recommended that the City consider further investigation of the pipe that was analyzed to see over time where breaks were occurring in relation to known points of weakness in the pipes. Also, the City could investigate the possibility of using the technology to evaluate very specific pipe segments that carried high risk of failure or high consequence of failure. The report also recommended that the City consider electronic data collection for work records and the development and implementation of an Asset Management Program.

Although this report is now complete, the NM EFC will continue to advise the City on this issue, if requested, and will share information on Asset Management approaches with City Public Works And Water Utility Department staff.

Multiple Barrier Evaluation Training for U.S. Forest Service

The NM EFC developed a training program entitled Multiple Barrier Evaluation Training that incorporates elements of sanitary survey training but from the perspective of operators of systems rather than engineers who will evaluate systems. The training focuses on the need to maximize the barriers of source, treatment, and distribution to protect public health. The participants are given information to describe the problems that may occur if any of the barriers is not operating sufficiently or if a barrier is not in place.

The training is two (2) or three (3) days and includes classroom and field exercises. Field exercises allow participants to survey a water system to see if they can determine deficiencies in the barriers and recognize the problems that may occur if the deficiencies are not corrected. The hope is that if operators understand the reason a survey person notes a deficiency they may be more likely to fix the problem or they can survey their own system and fix any problems they find.

The U.S. Forest Service contracted with the NM EFC to deliver this training to personnel working for water systems in New Mexico and Arizona Forests. The training had a diverse group of approximately 15 participants, including engineers, operators, managers, and technicians.

Playas, NM

New Mexico Tech is working towards the purchase of the Town of Playas in southern New Mexico near the Mexico/New Mexico/Arizona. This town is being purchased to establish a Homeland Security training facility. This facility will allow trainees to participate in simulations to learn how to handle emergencies. The NM EFC is involved in the environmental issues surrounding the initial set up of the facility and worked in an advisory capacity to NM Tech administrators as the town was being purchased. The NM EFC will be conducting an environmental assessment, in accordance with NEPA requirements, prior to the start up of activities on the site, but will not be involved in any of the facility's operations.

Public Management and Finance Program (PMFP)

The NM EFC has continued to work with the Syracuse EFC on the Public Management and Finance Program. The NM EFC believes that this approach is one that could benefit NM communities and strongly desires to bring this program to the state and region. The NM EFC participation in Syracuse EFC events is intended to provide several benefits: 1) demonstrate the collaborative ability of the individual centers, 2) build the skills of the NM EFC to bring this project to NM, and 3) share expertise gained in Region 6 with Region 2 and vice versa. This past year, the NM EFC participated in the April PMFP event in Minnowbrook, New York. During the event, the NM EFC presented a session on rate setting and participated in the community simulations.

The PMFP offers hands-on technical assistance to rural communities through the development of teams of technical assistance providers. At the April 2003 PMFP event, the teams were composed of representatives from accomplished nonprofit, academic, government, and private organizations that have established histories in providing technical assistance to rural communities. These organizations were brought together to provide information, technical assistance and support to small communities in need of assistance, particularly in the area of water and wastewater infrastructure.

New Mexico Resource Geographic Information System

The NM EFC has been a principal participant in the NM Resource Geographic Information System (RGIS) Program since 1996. This program was established by the New Mexico state legislature to assist state and local governments with developing and implementing GIS

programs. The NM EFC was one of three public service and research units of the University of New Mexico that comprised the RGIS Team. The other units are the Earth Data Analysis Center and the Bureau of Business and Economic Research. The RGIS program was able to make significant contributions to the local governments in the State of New Mexico and many were able to implement, improve, or gain data for GIS systems. In June of 2003, the NM EFC ended its affiliation with this program. The EFC's move to NM Tech and the fact that needs for the RGIS Program are more related to developing and serving spatial data as opposed to local government assistance, made it necessary for the NM EFC to give up this program. The NM EFC will maintain a loose affiliation with the RGIS program and will continue to do what it can to encourage local governments to move in the direction of developing GIS tools to aid in decision making.

New Initiatives for 2004

The new initiatives for the NM EFC are highlighted below. These initiatives build upon the work efforts of the NM EFC for the past several years.

Advanced Asset Management

The EPA has included Advanced Asset Management as one of the key elements in its approach to addressing the Infrastructure "Gap." The Gap is the amount of money needed to address the Nation's infrastructure needs minus the current available funding. Advanced Asset Management is an approach to optimize a water or wastewater system's infrastructure management. It includes strategies to determine the optimal point of infrastructure replacement and when a system is financially better off with rehabilitation or repair. The development and implementation of Advanced Asset Management strategies at water systems will help reduce overall life cycle costs and help decrease the Gap. However, it is important for water and wastewater system owners, managers, boards, operators, financial staff, and elected officials to receive information on the availability of the approach and the benefits it can provide. The NM EFC will be making presentations, working with water systems, and generally promoting this concept during 2004 as part of its capacity development activities.

Operator Certification Pathway Training

The NM EFC provided opportunities for Tribal water operators to receive certification during 2003. Clearly, the testing results showed a need for additional, intensive training for operators in order to increase overall operator competency and knowledge and to help them gain sufficient knowledge to be able to pass the test. An approach was tried in 2003, but it did not achieve the desired results and there were many difficulties that occurred during the training. In consultation with the Tribal Utility Advisory Committee, the NM EFC developed a new training approach that will be conducted throughout 2004. This approach, titled Pathway

Training, will include day long classroom and field training components every 3 weeks. It follows the Skeet Arasmith small water system training manual and covers all elements of operating a small water system. The training is geared for Level 1 operators and at the end of the training operators will take the Level 1 certification test (test date in December).

Tribal Compliance with the Arsenic Standard

The EPA issued its final Arsenic standard which lowered the Maximum Contaminant Level (MCL) from 50 micrograms per liter to 10 micrograms per liter. There are approximately 12 Tribal water systems in New Mexico that may have difficulty meeting this new standard. Some of these systems are well above the standard of 10 and will have to seek alternatives such as new source, blending of sources, or installing treatment. In approximately six cases, the system's arsenic level is between 10 and 20 ppb, making it unclear whether the systems will violate the standard or not. The EFC's previously sponsored study on arsenic at three Tribal systems indicated that the influent arsenic concentration can vary substantially. Therefore, if the systems that are between 10 and 20 conduct quarterly arsenic monitoring, as outlined in the arsenic regulation, they may have levels low enough to meet the standard. The actual compliance sampling for the new standard can not be completed until the next compliance period (2005 – 2007) but the EFC will be working with the Tribes in 2004 to do special studies on arsenic to try to determine prior to 2005 which systems will most likely violate the standard of 10 ppb. The EFC will also be working with UNM to provide some arsenic training for Tribal operators.

Public Management Finance Program (PMFP)

The NM EFC has been working with the Syracuse EFC to try to bring the PMFP concept to the State of New Mexico. The efforts over the past two years have not been successful, but the NM EFC has been able to conduct some small PMFP-like events. The NM EFC will be working with the Syracuse EFC and the NM Rural Development office to try to bring this very important program to the state and the region in 2004. The EFCs strong collaborative efforts with other assistance providers in the state as well as the previous year's PMFP-like events make 2004 an especially good year to begin this program.

Water System Security

The NM EFC wrote a proposal on behalf of the EFC Network to assist in the water system security efforts. This proposal was submitted in January 2003 and was not funded. However, the EFCN, lead by the NM EFC, has continued to investigate opportunities to assist in the water system security efforts and may work in this area in 2004.

Pacific Islands Financing

The NM EFC wrote a proposal on behalf of the EFC Network to assist EPA Region 9 with financing issues related to the Pacific Island Nations. These Nations face tremendous environmental problems, particularly related to water and wastewater infrastructure, and require significant amounts of money to overhaul them. Traditional finance approaches have not solved the problem and new innovative options are needed. One possibility to explore is an environmental revolving fund that would allow the Pacific Island Nations to take loan moneys for any environmental projects. The EFCN hopes to be working with EPA Region 9 on this critical project in 2004.

Water Conservation

The NM EFC began a project for the Office of the State Engineer, the Local Government Division, and the NM Environment Department to explore ways in which water systems could work collaboratively to address water conservation and drought management. The initial project is piloting this approach for three areas in New Mexico. The project will be completed in June 2004. The NM EFC will be exploring opportunities for additional work in this area in 2004.

EFC NETWORK COLLABORATIONS

The NM EFC has collaborated with other EFCs this past year on a variety of projects and proposals. Those collaborations are listed below.

Project	EFCs Included in Collaboration
Public Management Financing Program	Syracuse EFC (lead), EFC9, EFC@UNC, Maine EFC, UNM EFC
Resource Based Source Water Protection	UNM EFC (lead), Syracuse EFC, Maryland, Boise State EFC, and EFC@UNC
Rate Setting	Syracuse EFC, Maryland EFC
Water System Security Proposal	NM EFC (lead), Syracuse EFC, Boise State EFC, EFC@UNC, Louisville EFC, Maryland EFC, EFC9
Pacific Islands Financing Proposal	NM EFC (lead), Cleveland EFC, Boise State EFC, EFC@UNC, Louisville EFC, EFC9

CONFERENCES

Name of Conference	Date and Location	EFC Involvement
AWWA Source Water	January 20 – 21, 2003	Presented poster session and
Source Water Briefing to EPA	February 5, 2003	Presented briefing to staff of
Environmental Financial	March 4 - 5, 2003	Participated in Board Meeting
Environmental Finance Center	March 5 – 6, 2003	Participated in Meeting
American Planning Association	April 1, 2003	Made presentation as part of the
Public Management Finance	April 22 – 24, 2003	Presented session at workshop
EFC Meeting with EPA	May 8, 2003	Participated in Meeting
EPA Regions 4 and 6 Capacity	May 21 – 22, 2003	Made Presentation
EPA Source Water Protection	June 2 – 4, 2003	Presented a Training Workshop
IHS Training on Sanitary	July 8 – 10, 2003	Assisted in Sanitary Survey
EPA Regions 7,8,9 and 10	July 29 - 30, 2003	EFC Made Presentation and
Environmental Financial	August 4 - 5, 2003	Participated in Board Meeting
New Mexico Rural Water	August 12 – 14, 2003	Presented Workshop
EFC Network Directors Meeting	October 1 – 3, 2003	EFC Participated in Meeting
Association of State Drinking	October 6 – 8, 2003	Delivered presentation
EPA Region 6 Tribal	October 15 –16, 2003	Participated in Meeting
New Mexico First Town Hall on	October 2003	Invited Participant to Meeting
Council of Infrastructure	November 10 - 11, 2003	EFC Participated in Conference